

**AMENDMENTS TO THE CLAIMS:**

1. (Currently amended) A semiconductor device having a photo diode comprising:

a first conductivity type first semiconductor layer;

a first conductivity type second semiconductor layer disposed on said first conductivity type first semiconductor layer; and

a second conductivity type semiconductor layer formed at a surface layer portion of said first conductivity type second semiconductor layer;

wherein said first conductivity type first semiconductor layer comprises a surface impurity concentration greater than that of said first conductivity type second semiconductor layer; and

wherein ~~an end face of a depletion layer on a side of said first conductivity type first semiconductor layer and a surface layer of said first conductivity type first semiconductor layer are within no more than a predetermined distance when inverse biases are applied to said first conductivity type second semiconductor layer and said second conductivity type semiconductor layer, a depletion layer is spread to a region between a first predetermined amount and a second predetermined amount in a depth direction from a surface of said second conductivity type semiconductor layer, such that a sensitivity of said photo diode to light of a first wavelength and a sensitivity of light of a second wavelength, which is different from said first wavelength, are made substantially the same.~~

2. (Cancelled)

3. (Currently amended) A semiconductor device as set forth in claim 1, wherein said first predetermined amount is 3  $\mu\text{m}$  and said second predetermined amount is 6  $\mu\text{m}$  ~~depletion layer is designed to spread in a region including a region 3 to 6  $\mu\text{m}$  in a depth direction from a surface of said second conductivity type semiconductor layer.~~

4. (Currently amended) A semiconductor device as set forth in claim 1, wherein said ~~depletion layer is designed to spread in a region including a region 2 to 7  $\mu\text{m}$  in a depth direction from a surface of said second conductivity type semiconductor layer~~ first predetermined amount is 2  $\mu\text{m}$  and said second predetermined amount is 7  $\mu\text{m}$ .

5. (Cancelled)

6. (Previously amended) A semiconductor device as set forth in claim 1, wherein said first conductivity type first semiconductor layer is a first conductivity type substrate, and said surface impurity concentration of the first conductivity type substrate is at least  $1 \times 10^{17}/\text{cm}^3$ .

7. (Cancelled) .

8. (Previously amended) A semiconductor device as set forth in claim 1, wherein said first wavelength is 780 nm and said second wavelength is 650 nm.

9. (Cancelled)

10. (New) A semiconductor device having a photo diode comprising:

a three layer structure including:

a p-type semiconductor substrate having a surface impurity concentration ranging from about  $1 \times 10^{17}/\text{cm}^3$  to  $1 \times 10^{19}/\text{cm}^3$ ;

a p-type semiconductor layer having an impurity concentration of about  $5 \times 10^{13}/\text{cm}^3$  and formed on said p-type semiconductor substrate; and

an n-type semiconductor layer having an impurity concentration of about  $1 \times 10^{15}/\text{cm}^3$  and formed on said p-type semiconductor layer;

wherein an end face of a depletion layer on a side of said p-type semiconductor substrate and a surface layer of said p-type semiconductor layer are within no more than a predetermined distance when inverse biases are applied to said p-type semiconductor layer and said n-type semiconductor layer, such that a sensitivity of said photo diode to light of a first wavelength and a sensitivity of light of a second wavelength, which is different from said first wavelength, are made substantially the same.

11. (New) A semiconductor device having a photo diode comprising:

a first conductivity type first semiconductor layer;

a first conductivity type second semiconductor layer disposed on said first conductivity type first semiconductor layer; and

a second conductivity type semiconductor layer formed at a surface layer portion of said first conductivity type second semiconductor layer;

wherein said first conductivity type first semiconductor layer comprises a surface impurity concentration greater than that of said first conductivity type second semiconductor layer; and

wherein when inverse biases are applied to said first conductivity type second semiconductor layer and said second conductivity type semiconductor layer, an end face of a depletion layer on a side of said first conductivity type first semiconductor layer, and a surface layer of said first conductivity type first semiconductor layer are brought within no more than 3  $\mu\text{m}$ , forming a space layer, such that a sensitivity of said photo diode to light of a first wavelength and a sensitivity of light of a second wavelength, which is different from said first wavelength, are made substantially the same.

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